WHAT WE CLAIM IS:

1. A position detection system comprising a position pointer including at least one coil, for pointing to a position, and a position detector for detecting the position pointed to by the position pointer by transmitting and receiving a signal to and from the position pointer by means of electromagnetic coupling,

the position detector comprising:

a plurality of transmission coils for transmitting a signal to detect the position to the position pointer;

a plurality of sensor coils for receiving the signal transmitted from the position pointer;

signal transmission means for selecting one of the plurality of transmission coils in accordance with the position of the position pointer and driving the selected transmission coil so as to transmit the signal to detect the position;

reception means for selecting the plurality of sensor coils one by one and receiving the signal transmitted from the position pointer; and

position detection means for detecting the position pointed to by the position pointer in accordance with the signal received by the reception means.

2. A position detection system according to claim 1, wherein the plurality of transmission coils are disposed so as to be coaxial with each other.

3. A position detection system according to claim 1, wherein the signal transmission means defines a plurality of sub areas in the sensor area in which the

plurality of transmission coils are disposed, selects a transmission coil capable of supplying a strongest signal to detect the position to the position pointer depending on a particular sub area in which the position pointer is located, and drives the selected transmission coil thereby supplying the signal to detect the position to the position pointer.

4. A position detection system according to claim 1, wherein, depending on the relative spatial relationship between the selected transmission coil and the position of the position pointer detected by the position detection means, the signal transmission means drives the selected transmission coil such that the phase of the signal to detect the position supplied to the position pointer is maintained without being inverted.

5. A position detection system according to claim 4, wherein, depending on whether the position pointer is located in the inside or the outside of the selected transmission coil, the signal transmission means inverts the phase of the signal by which to drive the transmission coil such that the signal to detect the position supplied to the position pointer is maintained unchanged in terms of its phase.

6. A position detection system according to claim 1, wherein the plurality of transmission coils include a first transmission coil and a second transmission coil disposed outside the first transmission coil, the first and second transmission coils being coaxial with each other.

7. A position detection system according to claim 6, wherein three sub areas are defined in the sensor area in which the position of the position pointer is detectable, the three sub areas including a first area in which when the signal to detect the position is transmitted in a first phase, the first transmission coil is capable of transmitting the signal to detect the position with a greater signal level than the second transmission coil can, a second area in which when the signal to detect the position is transmitted in the first phase, the second transmission coil is capable of transmitting the signal to detect the position with a greater signal level than the first transmission coil can, and a third area in which when the signal to detect the position is transmitted in a second phase opposite to the first phase, the first transmission coil is capable of transmitting the signal to detect the position with a greater signal level than the second transmission coil can,

and wherein the signal transmission means transmits the signal to detect the position in the first phase from the first transmission coil when the position pointer is located in the first area, the signal transmission means transmits the signal to detect the position in the first phase from the second transmission coil when the position pointer is located in the second area, and the signal transmission means transmits the signal to detect the position in the second phase from the first transmission coil when the position pointer is located in the third area.

8. A position detection system according to claim 7, wherein the reception means sequentially selects a predetermined number of sensor coils located in the first area and an area adjacent to the first area and receives the signal transmitted from the

position pointer when the position pointer is located in the first area, the reception means sequentially selects a predetermined number of sensor coils located in the second area and an area adjacent to the second area and receives the signal transmitted from the position pointer when the position pointer is located in the second area, and the reception means sequentially selects a predetermined number of sensor coils located in the third area and an area adjacent to the third area and receives the signal transmitted from the position pointer when the position pointer is located in the third area.

9. A position detector that transmits and receives a signal to and from a position pointer including at least one coil for pointing to a position thereby detecting the position pointed to by the position pointer, the position detector comprising:

a plurality of transmission coils for transmitting a signal to detect the position to the position pointer;

a plurality of sensor coils for receiving the signal transmitted from the position pointer;

signal transmission means for selecting one of the plurality of transmission coils in accordance with the position of the position pointer and driving the selected transmission coil so as to transmit the signal to detect the position;

reception means for selecting the plurality of sensor coils one by one and receiving the signal transmitted from the position pointer; and

position detection means for detecting the position pointed to by the position pointer in accordance with the signal received by the reception means.

10. A position detector according to claim 9, wherein the plurality of transmission coils are disposed so as to be coaxial with each other.

11. A position detector according to claim 9, wherein the signal transmission means defines a plurality of sub areas in the sensor area in which the plurality of transmission coils are disposed, selects a transmission coil capable of supplying a strongest signal to detect the position to the position pointer depending on a particular sub area in which the position pointer is located, and drives the selected transmission coil thereby supplying the signal to detect the position to the position pointer.

12. A position detector according to claim 9, wherein depending on the relative spatial relationship between the selected transmission coil and the position of the position pointer detected by the position detection means, the signal transmission means drives the selected transmission coil such that the phase of the signal to detect the position supplied to the position pointer is maintained without being inverted.

13. A position detector according to claim 12, wherein depending on whether the position pointer is located in the inside or the outside of the selected transmission coil, the signal transmission means inverts the phase of the signal by which to drive the transmission coil such that the signal to detect the position supplied to the position pointer is maintained unchanged in terms of its phase.

14. A position detector according to claim 9, wherein the plurality of transmission coils include a first transmission coil and a second transmission coil disposed outside the first transmission coil, the first and second transmission coils being coaxial with each other.

15. A position detector according to claim 14, wherein three sub areas are defined in the sensor area in which the position of the position pointer is detectable, the three sub areas including a first area in which when the signal to detect the position is transmitted in a first phase, the first transmission coil is capable of transmitting the signal to detect the position with a greater signal level than the second transmission coil can, a second area in which when the signal to detect the position is transmitted in the first phase, the second transmission coil is capable of transmitting the signal to detect the position with a greater signal level than the first transmission coil can, and a third area in which when the signal to detect the position is transmitted in a second phase opposite to the first phase, the first transmission coil is capable of transmitting the signal to detect the position with a greater signal level than the second transmission coil can,

and wherein the signal transmission means transmits the signal to detect the position in the first phase from the first transmission coil when the position pointer is located in the first area, the signal transmission means transmits the signal to detect the position in the first phase from the second transmission coil when the position pointer is located in the second area, and the signal transmission means transmits the signal to detect the position in the second phase from the first transmission coil when the

position pointer is located in the third area.

16. A position detector according to claim 15, wherein the reception means sequentially selects a predetermined number of sensor coils located in the first area and an area adjacent to the first area and receives the signal transmitted from the position pointer when the position pointer is located in the first area, the reception means sequentially selects a predetermined number of sensor coils located in the second area and an area adjacent to the second area and receives the signal transmitted from the position pointer when the position pointer is located in the second area, and the reception means sequentially selects a predetermined number of sensor coils located in the third area and an area adjacent to the third area and receives the signal transmitted from the position pointer when the position pointer is located in the third area.

17. A power conserving position detector that transmits and receives a signal to and from a position pointer including at least one coil for pointing to a position thereby detecting the position pointed to by the position pointer, the position detector comprising:

a plurality of transmission coils for transmitting a signal to detect the position to the position pointer, each of said plurality of transmission coils comprising a resonant circuit tuned to resonate at a selected resonant frequency;

a plurality of sensor coils for receiving the signal transmitted from the position pointer;

signal transmission means for selecting one of the plurality of transmission coils in accordance with the position of the position pointer and driving the selected transmission coil with a pulsed carrier signal at said selected resonant frequency so as to transmit the signal to detect the position;

reception means for selecting the plurality of sensor coils one by one and receiving the signal transmitted from the position pointer; and

position detection means for detecting the position pointed to by the position pointer in accordance with the signal received by the reception means.

18. The power conserving position detector according to claim 17, wherein the plurality of resonant transmission coils are disposed so as to be coaxial with each other.

19. The power conserving position detector according to claim 17, wherein the signal transmission means defines a plurality of sub areas in the sensor area in which the plurality of transmission coils are disposed, selects a transmission coil capable of supplying a strongest signal to detect the position to the position pointer depending on a particular sub area in which the position pointer is located, and drives the selected transmission coil with said pulsed carrier signal thereby supplying the signal to detect the position to the position pointer.

20. The power conserving position detector according to claim 17, wherein depending on the relative spatial relationship between the selected transmission coil and the position of the position pointer detected by the position detection means, the

signal transmission means drives the selected transmission coil such that the phase of the pulsed carrier signal to detect the position supplied to the position pointer is maintained without being inverted.

20. The power conserving position detector according to claim 17, wherein said position detection means is configured to provide user input data to a portable data processing device.

21. The power conserving position detector according to claim 17, wherein said position detection means is configured to provide user input data to a personal digital assistant

22. The power conserving position detector according to claim 17, wherein said position detection means is configured to provide user input data to a mobile telephone.

23. The power conserving position detector according to claim 17, wherein said position detection means is configured to provide user input data to a personal computer.

24. A method for transmitting an electromagnetic wave from a position detector to a position pointer carrying a resonant circuit, comprising:

(a) providing, in the position detector, a plurality of sensor coils and at least one transmission coil for transmitting a signal to detect the position of the position pointer, said transmission coil comprising a resonant circuit tuned to resonate at a selected

resonant frequency;

(b) energizing said transmission coil with a pulsed carrier signal at said selected transmission coil resonant frequency;

(c) receiving said pulsed carrier signal in said position pointer resonant circuit and, in response, radiating a pulsed position pointer signal.

25. The method of claim 24, further comprising:

(d) receiving said pulsed position pointer signal in said position detector sensor coils.

26. The method of claim 24, wherein the step of providing said at least one transmission coil comprising a resonant circuit comprises providing an inductive transmission coil connected in series with a capacitor.

27. The method of claim 24, wherein the step of providing said at least one transmission coil comprises providing first and second transmission coils, said first transmission coil being wound proximate to the periphery of the position detector sensor coils along a first path; and

wherein said second transmission coil is wound proximate to the periphery of the position detector sensor coils along a second path not coextensive with said first path.

28. The method of claim 27, further comprising:

(d) energizing solely said first transmission coil with said pulsed carrier signal at said selected resonant frequency; and

(e) energizing solely said second transmission coil with said pulsed carrier signal at said selected resonant frequency.